

# Two new Species of *Glycaspis* (Homoptera: Psylloidea) from tropical Queensland, with Notes on the Genus

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Two new species of the genus *Glycaspis* Taylor from *Eucalyptus raveretiana* and *E. similis* respectively are described. New hosts and localities for other species are recorded. Further indications of the possible occurrence of parthenogenesis within the genus are given. The *Glycaspis* species described from *E. raveretiana* indicates its phyletic affinity with *G. clivosa* from *E. brachyandra*.

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## INTRODUCTION

The four tropical *Eucalyptus* species: SBA:A *deglupta* Blume, SBA:C *raveretiana* F. Muell., SBA:D *brachyandra* F. Muell., and SSA:A *howittiana* F. Muell. constitute the subgenus *Telocalyptus* (Johnson, 1976) among some 550 species and subspecies in the genus (Chippendale and Wolf, 1981).

*Glycaspis* (*Glycaspis*) *clivosa* Moore, 1977, was previously described from *E. brachyandra*. As no information was available on possible insect/host relationships of *E. raveretiana* or *E. howittiana*, this project was designed to obtain from them *Glycaspis* specimens and other associated Psylloidea for taxonomic studies.

With the addition of two new species, the subgenus *Glycaspis* now contains 85 of the 135 species in the genus; the subgenera *Synglycaspis* (Moore, 1961, 1970a) and *Boreioglycaspis* (Moore, 1964) contain 38 species and 12 species respectively.

As *Glycaspis* spp. are variable in colour, most species being apparently influenced by temperature and/or seasonal factors, general coloration only is given in the descriptions.

All of the *Glycaspis* species mentioned were collected by the writer, and are lodged in the Australian National Insect Collection, Canberra. Other genera of the Psylloidea collected are being studied by Mr K. L. Taylor, psyllid taxonomist.

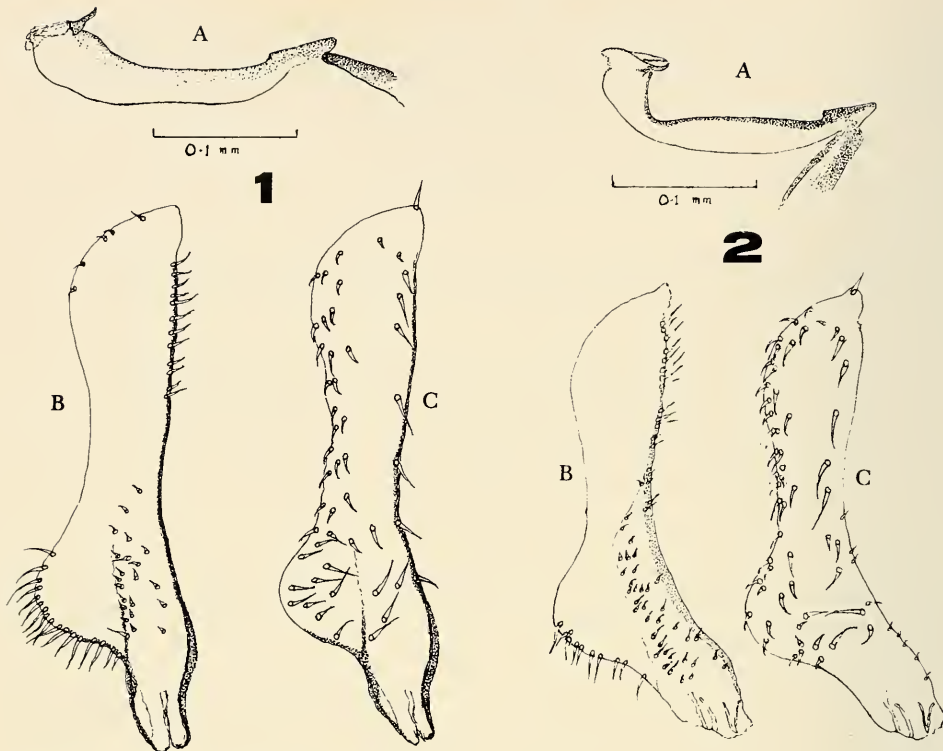
## RESULTS

### (a) TAXONOMIC

#### *Glycaspis* (*Glycaspis*) *operta* sp.n.

Fig. 1

*Types*: — Holotype ♂ on slide labelled 'Boundary Creek, 18 km NE. Nebo, Qld, 6 v 1982, *E. raveretiana*'. Paratypes: 1 slide of a single ♂, with same label data as the holotype; 1 slide of a ♂ labelled 'Denison Creek, 30 km NE Nebo', with same date; 4 slides each of a single ♂ labelled 'Boundary Crk, 18 km NE Nebo, Qld, 14 ix 1982, *E. raveretiana*'. In ethanol: 3 ♀♀, lerps, in tube with same label data as the holotype; 4 lerps in tube with same label data, but dated 29 vii 1981; 1 ♀ in tube with same label data but dated 16 vii 1980; 8 ♂♂ 7 ♀♀ and 8 oval lerps in tube with same label data but dated 14 ix 1982; 5 ♀♀, lerps, in tube labelled 'Denison Crk, 30 km NE Nebo, 7 v 1982, *E. raveretiana*'; 4 ♀♀, lerps, in tube with same data but dated 29 vii 1981; 1 ♀ in tube with same data, dated 16 vii 1980.



Figs 1 and 2. Aedeagi and claspers of *Glycaspis* spp.

1. *G. aperta*. (A), Aedeagus. (B), Claspers: internal face, (C), external face.
2. *G. atkinsoni*. (A), Aedeagus. (B), Claspers: internal face, (C), external face.

*General colour*: Males (live specimens) pale bright green indistinctly marked with black; females as males but lightly marked with black and with red suffusion. The green being fugitive in ethanol, specimens become creamy-yellow.

*Claspers and aedeagus*: as in Fig. 1.

*Length of aedeagus*: 0.198-0.208 mm (7 specimens).

*Length of hindwing vein*  $Cu_1$ : as Group (ii) (see Moore, 1970b, 1983).

*Lerps*: round to oval.

*Host*: SBA:C *Eucalyptus raveretiana*.

*Notes*: The phyletic position of *G. aperta* appears to be nearest to, and more recent than, *G. clivosa*, and differs in the following characteristics:— aedeagus longer (*G. clivosa* 0.171-0.185 mm, 10 specimens), less upturned and more rounded distally, proximal ridge longer and narrower. Claspers more fragile but with posterior edge more strongly sclerotized, setae more sparse, protrusion toward base less prominent. Lerps are often oval in shape, thus readily distinguishing this species from *G. clivosa* which constructs only round lerps.

The new specific name is the feminine form of the Latin adjective *opertus*, 'hidden, concealed'.

*Glycaspis (Glycaspis) atkinsoni* sp. n.

Fig. 2

*Types*: — Holotype ♂ on slide labelled 'c. 15 km NW Basalt River (Gregory Highway), Qld, 18 ix 1982, *E. similis*'. Paratypes: 1 slide of a single ♂ with same label data as the holotype. In ethanol: 1 ♀ with same label data.

*General colour*: Live males pale bright green indistinctly marked with black; females as the males but lightly marked with black and with red suffusion; in ethanol, orange-yellow.

*Claspers and aedeagus*: as in Fig. 2.

*Length of aedeagus*: 0.178 and 0.188 mm (2 specimens).

*Length of hindwing vein Cu<sub>1</sub>*: as Group (ii).

*Lerps*: only 1 small round lerp was observed, so the shape of late instar nymphal lerps is not known.

*Host*: EFAAA *Eucalyptus similis* Maiden.

*Notes*: The phyletic position of *G. atkinsoni* appears to be nearest, and prior to, *G. violae* Moore (1970a: 292), differing from it in the shape of the aedeagus which is distally taller, more curved and with distal outer extremity more rounded, neck narrower, proximal ridge less rounded and more horizontal. Claspers with fewer setae and more peaked distally, distance from anterior protrusion to base, much less than in *G. violae*.

Named for Mr Alan Atkinson, of 'Valley of Lagoons', Qld, who gave assistance with the locating of, and permission to collect from, eucalypts on his property, on 3 occasions.

## (b) BIOLOGICAL

Collections from *E. raveretiana* for psyllid specimens during July 1980 and July 1981 yielded only female adults of *Glycaspis*, but the occurrence of round and oval lerps on leaves indicated its role as a host. Male and female specimens were obtained during 1982.

The description of the species *G. aperta* indicates the relatively close phyletic affinities of the two known species from *Telocalyptus* hosts. Both of these *Glycaspis* species are included in the tropical *caurina* group of species (Moore, 1983).

*E. howittiana* was first sampled for psyllid specimens during July 1980, when no evidence that a *Glycaspis* species utilized it as host was obtained. However, female adults, together with round and oval lerps of a *Glycaspis* species, were obtained during August 1981. Specimens of females and lerps were again obtained during September 1982 at 6 km E 'Valley of Lagoons' homestead, c. 170 km W Ingham, but no males were found.

The stand of *E. howittiana* extending over several hectares was intensively sampled on each occasion.

Characters of female specimens by which species of *Glycaspis* may be separated have not yet been determined, so the species utilizing *E. howittiana* as host remains unrecognized.

The absence of male specimens from these intensive and extensive collections necessarily suggests the occurrence of parthenogenesis in the species concerned. Such a possibility for other *Glycaspis* species has previously been reported (Moore, 1970: 345), and to the writer's knowledge, no evidence of parthenogenesis in psyllids has been recorded.

*E. similis* is included in the subgenus *Eudesmia* of Pryor and Johnson (1971). It was sampled for psyllid specimens during September 1972 at c. 5 km E Alice, Qld, when no evidence of a *Glycaspis* sp. utilizing it as host was obtained (Moore, 1975). The oc-

currence of *G. atkinsoni* on this host near Basalt River constitutes a new host record for *Glycaspis* species.

Apparently because of drought conditions persisting in that area, foliage of the majority of *E. similis* trees in the large stand was conspicuously yellowish-brown and desiccated, although foliage of other eucalypt species appeared normal.

*Glycaspis violae* which is known to occur on *E. cambageana* Maiden and possibly *E. melanophloia* F. Muell. shows close affinity with *G. atkinsoni*. It is thus suggested that *E. similis*, the host of *G. atkinsoni*, may have affinity with the 'box' and 'ironbark' groups of eucalypts.

*Glycaspis froggatti* Moore was collected from an unnamed eucalypt species SUDABB, the eastern arborescent race of *E. normantonensis* Maiden and Cambage at 11 km E of 'Valley of Lagoons' homestead. At the same site, another *Glycaspis* species constructing round lerps (possibly *G. egregia* Moore whose host is known to be *E. moluccana* Roxb.) was collected from SUL:A, the undescribed northern equivalent of *E. moluccana* growing intermingled with the former eucalypt. Distribution of *G. egregia* which was again reared from *E. moluccana*, is now extended to 32 km E of Rockhampton, on the Emu Park Road.

*Glycaspis (Boreioglycaspis) melaleucae* Moore was collected at Boundary Creek, giving a new locality record for the species. The previous nearest locality was Cape River, 112 km S of Charters Towers, Qld.

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